

CLAIMS

What is claimed is:

1. A method for managing back reflections in an optical system, comprising forming a coiled optical waveguide around a coiling device.
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2. The method of Claim 1, wherein forming the coiled waveguide comprises forming a coil with a plurality of loops.
3. The method of Claim 1, wherein forming the coiled waveguide
10 comprises forming a coil with a plurality of loops having a radius less than 0.5 inches.
4. The method of Claim 1, wherein forming the coiled waveguide comprises wedging a section of waveguide into an impinging region of the coiling device.
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5. The method of Claim 1, further comprising coupling light from a core of the coiled waveguide to a cladding of the coiled waveguide.
6. The method of Claim 1, wherein forming the coiled waveguide
20 comprises forming a coil with a number of loops, and the method further comprises the step of specifying the number of loops to meet an optical networking specification.
7. The method of Claim 1, wherein forming a coiled waveguide around a
25 coiling device comprises forming a coiled waveguide around a spool.

8. An optical system comprising an optical waveguide and a radius controlling device, the optical waveguide comprising:

a cylindrical core having a first refractive index, the core comprising a light conducting material operative to guide light;

5 a cladding axially surrounding the core operative to guide light, the cladding having a second refractive index lower than the first refractive index;

a first end;

a second end opposite the first end, the second end comprising an end face operative to reflect light back into the cylindrical core; and

10 a coil between the first end and the second end operative to suppress reflection from the end face, wherein the coil is formed around the radius controlling device with a controlled radius operative to attenuate guided light while controlling mechanical stresses of the optical waveguide.

15 9. The optical system of Claim 8, wherein the radius controlling device comprises a spool.

10 10. The optical system of Claim 8, wherein the coil with the controlled radius is further operative to attenuate guided light by coupling guided light out of the core and into the cladding.

11. The optical system of Claim 8, wherein the controlled radius is further operative to minimize the risk of fracture of the optical waveguide.

25 12. The optical system of Claim 8, wherein the coil comprises a plurality of loops.

13. The optical system of Claim 8, wherein the coil comprises a number of loops, the number selected on the basis of a return loss specification.

14. The optical system of Claim 8, wherein the controlled radius is less
5 than 12 millimeters and more than 2 millimeters.

15. The optical system of Claim 8, wherein the coil is adjacent to the end face.

10 16. The optical system of Claim 8, wherein the optical waveguide is a pigtail optical fiber.

17. An optical system comprising:
a spool having a radius; and
an optical fiber having a source end, an exposed end face opposite the source end, and a section adjacent the exposed end face, wherein
- 5 the section is coiled around the spool and is operative to suppress reflections from the exposed end face.
18. The optical system of Claim 17, wherein the spool comprises an impinging region and at least some portion of the section is wedged in the impinging
- 10 region.
19. The optical system of Claim 17, wherein the spool comprises an elastomer material.
- 15 20. The optical system of Claim 17, further comprising an optical splitter and a housing, wherein the source end is coupled to the optical splitter, and wherein the spool, the optical fiber, and the splitter are internal to the housing.

21. A housing apparatus comprising:
a receptacle operative to mount an optical source that is coupled to a first optical fiber having a first end opposite the source and a second optical fiber having a second end opposite the source;
5 a coiling device operative to maintain the second optical fiber in a coiled position when the second optical fiber is not in service; and
an enclosure housing the receptacle and the coiling device, wherein the enclosure comprises:
a first port operative to couple light from the first end of the first
10 optical fiber out of the enclosure; and
a second port operative to couple light from the second end of the second optical fiber out of the enclosure when the second optical fiber is in service.
22. The housing apparatus of Claim 21, wherein the coiling device is
15 further operative to suppress back reflections from the second end of the second optical fiber when the second optical fiber is not in service.
23. The housing apparatus of Claim 21, wherein the coiling device is
further operative to maintain the second optical fiber in a coiled position with a
20 controlled radius, wherein the controlled radius is operative to suppress back reflections from the second end of the second optical fiber while controlling mechanical stress in the second optical fiber.
24. The housing apparatus of Claim 21, wherein the optical source is an
25 optical splitter.